April 6, 2001

Mr. Alex Marion, Director
Engineering Department
Nuclear Generation Division
Nuclear Energy Institute
1776 Eye Street, NW
Suite 400
Washington, DC 20006-3708

SUBJECT: ADOPTION OF NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARD 805

Dear Mr. Marion:

This is in response to your letter dated March 23, 2001, in which you provided a list of the industry concerns associated with the adoption of National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants." In order to move forward in the most efficient manner, we want to be sure that our understanding of your concerns and the technical basis for those concerns is complete. Therefore, a specific response to each of the points in this letter and its enclosure at our next meeting would be most helpful.

I am encouraged that NEI has engaged the staff in helping us understand the underlying interests of the industry so that the proposed rulemaking to endorse NFPA 805 will be a viable option. After a thorough review of the concerns identified in your letter, I am confident that the barriers to the implementation of NFPA 805 by licensees can be resolved through the rulemaking process with appropriate implementation guidance developed by NEI. We would like to discuss the resolution of these barriers in a forthcoming meeting.

I would like to provide more information on one point that has recurred in several pieces of correspondence. As stated by Chairman Meserve in his response to Mr. Ralph Beedle of NEI on February 27, 2001, if a more risk-informed, performance-based regulatory framework for fire protection in nuclear power plants is to be developed, then a rulemaking is necessary. Although the staff shares your desire to find less cumbersome ways to implement risk informed regulation, the basis for the Commission's position is that regulatory guidance by itself cannot alter the specific regulatory requirements contained in the Commission's fire protection regulations.

We have always regarded NEI's commitment to develop implementing regulatory guidance for the proposed rulemaking as an important and positive step toward arriving at practical and mutually satisfactory implementation of NFPA 805. Consistent with the information provided to the Commission in our rulemaking plan dated January 13, 2000, (SECY 00-0009) I am also hopeful that NEI will be able to reaffirm its previous commitment to develop the implementing guidance for the adoption of NFPA 805. As stated in SECY 98-058, "Development of a Risk-

Informed, Performance-Based Regulation for Fire Protection at Nuclear Power plants," dated March 26, 1998, the benefits for transitioning to a more risk-informed, performance-based structure for fire protection could be to evaluate the safety-impact of proposed plant changes in an integrated manner to reduce regulatory burden, and to identify areas where requirements should be either increased or decreased.

In Item 1 of Enclosure 3 to your letter you reiterate your position that the adoption of NFPA 805 be optional by licensees. As stated in SECY 98-058, and all subsequent staff and Commission documents related to the fire protection rulemaking, the adoption of NFPA 805 will be a voluntary alternative to a plant's existing fire protection licensing basis, and will not be backfit upon licensees.

A second recommendation from NEI proposed a revision to Section 3.1 of the standard to allow the application of performance based approaches to the fundamental fire protection program elements and minimum design requirements. We believe that the current provisions of Section 1.7 allow performance-based approaches, if the alternative approach provides an equivalent level of safety to the requirements specified in Chapter 3. The NFPA standard excluded performance based approaches because of the current absence of adequate performance based approaches for the items in Chapter 3. Thus, development of adequate performance based approaches would be necessary before such a change could be implemented. The staff is prepared to review performance based approaches which the industry believes could be used for the elements in Chapter 3. Chapter 3 currently has a provision that allows alternatives that had been previously reviewed and approved by the authority having jurisdiction to remain in place. This provision provides flexibility for existing plant configurations which have been previously reviewed and approved by the NRC.

In Item 3 of Enclosure 3 of your letter you recommend that the statement in Section 2.4.2 of NFPA 805 remain to allow for other performance-based alternatives, to address future analytical tools such as NEI 00-01. The staff agrees with this provision in NFPA 805, that allows the use of such alternatives, once they have been reviewed and approved by the NRC.

In your letter you requested that the NRC staff amplify on its concerns with NFPA 805 as presented by the staff at the NEI Fire Protection Information Forum in February 2001. These concerns are related to; (1) the nuclear safety performance criteria in NFPA 805 that allows for the use of a single high pressure charging/injection pump coupled with a pressurizer power operated relief valve (i.e. feed and bleed) as the only fire protected shutdown path for decay heat removal in pressurized water reactors, (2) the exception to the requirement in the standard concerning manual hose station and standpipe operability following a seismic event, and (3) the use of recovery actions by plant personnel to achieve the nuclear safety performance criteria when using a performance-based approach. I have included additional detailed information on each of these concerns in Enclosure 1 to this letter for your information. We hope that this letter and the enclosure will serve as useful points of departure for future discussions that will lead to closure on the issues and satisfy the underlying interests of the public, the industry and the staff. The staff is supportive of providing additional guidance in the areas identified in Enclosure 2 to your letter, or in additional areas that will be identified during the rulemaking process.

The information provided in your letter and this response will serve as the basis for our upcoming discussions concerning the path forward in adopting NFPA 805 as a voluntary alternative to the NRC's existing fire protection requirements. I look forward to future interaction with the NEI staff should the rulemaking proceed. If you have any questions, please contact
Mr. Edward Connell of my staff at 301-415-2838.

Sincerely,

/RA/

John N. Hannon, Chief
Plant Systems Branch
Division of Systems Safety and Analysis
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Enclosure: As stated

ENCLOSURE 1

NRC Staff Significant Issues Concerning NFPA 805

- Section 1.5.1 (b) and (c) - Nuclear Safety Performance Criteria - The standard currently allows the use a high pressure charging/injection pump coupled with the pressurizer power operated relief valves as the sole fire protected shutdown path for maintaining reactor coolant inventory, pressure control and decay heat removal capability (i.e. feed and bleed) for pressurized water reactors (PWRs). While it is true that feed and bleed for PWRs has been approved by the NRC in certain limited risk-informed applications, it has not been approved as the only means of safe shutdown following a design basis event or fire. Reliability of feed and bleed depends on the proper functioning of PORVs and safety valves, and their reliability has been shown to be questionable. Use of feed and bleed compounds the recovery following an event by potentially leaving large quantities of reactor coolant on the floor of the containment. A strategy that relies on feed and bleed as the only means of safe shutdown in PWRs does not appear to be a prudent course of action. Therefore, in the absence of a convincing argument to the contrary, the staff would propose to take exception to this provision in the rulemaking to preclude the use of feed and bleed as the only success path for achieving the nuclear safety function at PWRs.

- Exception to Section 3.6.4 - Standpipe and Hose Stations - The exception to the requirement to supply water to standpipes and hose stations following a safe shutdown earthquake (SSE) for existing plants not capable of meeting this requirement should be revised. The exception in NFPA 805 should provide adequate guidance as to what constitutes an acceptable alternative, and establish appropriate limits on the scope of possible alternatives to the requirement. Such clarification could be provided in the staff's Regulatory Guide or the NEI implementing guidance. Licensee's who have not had their current capability reviewed and approved by the NRC, and who find the provision in Section 3.6.4 an unnecessary burden could request plant specific exceptions to this requirement. Such exceptions could be requested when the application is submitted to change the plant's fire protection license condition to adopt NFPA 805.

- Section 4.2.3.1 - Deterministic Approach - This section allows the use of "recovery actions" to demonstrate, under the performance-based approach, that a success path for achieving the nuclear safety performance criteria is maintained free of fire damage. The staff has no objection to the manual operation of valves, switches and circuit breakers to operate equipment, consistent with existing staff positions concerning the feasibility and timeliness of such actions, using either the deterministic or performance-based options specified in NFPA 805. However, reliance upon more complex actions, such as repair or replacement of equipment, is a concern because no guidance currently exists on how to assess the feasibility and time constraints on such recovery actions, and how to establish limits on the number or types of recovery actions permitted in the event of a fire when using a performance-based approach. The staff anticipates that the appropriate information and limits concerning recovery actions will be included in the implementing guidance when developed by NEI, to provide reasonable assurance of maintaining public health and safety when such recovery actions are relied upon to achieve the nuclear safety performance criteria.